

ABSTRACT

Guard electrodes 2 which are electrically connected with a conductive portion of a cooling water passage 23 through connection lines 3 are respectively provided in the middle of a water inlet pipe 1 connected with a water inlet master pipe 10 and a water outlet pipe 6 connected with a water outlet master pipe 13 in M pieces of semiconductor laser units 4. At this time, since the guard electrode 2 has a potential equal to the conductive portion of the cooling water passage 23, the electric current hardly flows between the guard electrode 2 and the conductive portion of the cooling water passage 23. As a result, rusting is inhibited in the M pieces of semiconductor laser units 4, and a clogged piping is prevented in the cooling water passage 23.